FORENSIC SCIENTIST (FIREARMS & TOOLMARK ANALYST)
CS-401-11

INTRODUCTION

This position is located in the Department of Forensic Sciences (DFS). The mission of the DFS is to provide high-quality, timely, accurate, and reliable forensic science services using best practices and best available technology, focusing on unbiased science and transparency, to enhance public safety and health.

The position is responsible for performing examinations of physical evidence submitted to the Firearms Examination Unit related to firearms and tool mark identification.

MAJOR DUTIES

Identifies, analyzes, compares, and interprets evidence in criminal investigations. The types of crimes include person crimes, such as homicides, sexual assaults, and robberies, as well as property crimes and the types of cases that might be encountered in the laboratory could include, but are not limited to the following:

- Ballistics (bullets, cartridges, casings)
- Identification of types of weaponry/triggers/barrel/mechanics of the weapon, etc.
- Identification of ammunitions
- Analysis of tool marks
- Restoration of serial numbers
- Test-firing of weapons in the lab
- Analysis of powder residue/burns/patterns
- Determining the caliber weapon
- Determining the trigger pull weight of a weapon
- Reconstruction of projectile evidence
- Reconstruction of a shooting scene of crimes

Analyzes a range of firearms evidence, utilizing a limited variety of techniques and processes; examines, identifies and presents conclusions of examinations of firearms, spent and unspent ammunition, etc.

Performs examinations on substrates such as clothing or bedding to determine the presence of residue or powder patterns, muzzle to target distance determinations, restoration of obliterated serial numbers, and long range trajectory evaluations.

Responds to crime scenes when necessary to assist with documentation of evidence, projectile trajectory determination, and reconstruction and diagramming of shooting events.

Enters data into the National Integrated Ballistics Information Network (NIBIN).

Testifies in court as a witness in connection to the evidence analyzed; studies new techniques and procedures in scientific analysis, collection, and processing; participates in a structured training program; demonstrates continuous effort to improve operations, decrease turnaround times, streamline work processes, and work cooperatively and jointly to provide quality seamless customer service.

Researches and analyzes data to perform mathematical and statistical computations to complete scientific examinations.

Works with the team leader and supervisor and other scientists to ensure accreditation standards are met.

Examines simple firearms related evidence, utilizing a variety of methods; identifies, preserves, analyses, interprets, and presents conclusions of firearms, projectiles, spent and unspent cartridges testing and comparison of evidence with known and documented reference data sets.

May be required to provide advices on the collection of evidence in criminal cases, including those involving deaths, especially when homicide is suspected, and other violent crimes; evaluates risks concerning or identifying hazards in the laboratory.

Works collaboratively with investigators and members of the justice system to analyze and interpret evidence, and other information to develop information necessary to meet the objectives of the forensic investigation.

With guidance, effectively reports findings and conducts forensic examinations using validated tools and techniques.

Conducts a range of analyses; works effectively under pressure; may be required to provide technology advisory services to other agencies and department staff to enhance forensic investigations.

Operates, trouble shoots and performs minor repairs and preventive maintenance on equipment.

Identifies new methods or alternatives and/or to provides alternative methods for performing firearms examinations or determines the effectiveness of current analytical methods.

Follows evidence control procedures to maintain chain-of-evidence integrity and ensures evidence is locked securely in a designated location before and after analysis. Develops examination plans to effectively and efficiently meet the scope of the questions at hand in the investigation addressing inculpatory and exculpatory evidence.

Exercises discretion and sound judgment to determine proper courses of action and assesses and evaluates a variety of situations, problems, conditions or questions.

Utilizes computer software to analyze results of tests in order to perform tests and keep up-to-date on current studies, pamphlets, journals, and books for use in devising new methods and tests. Devises charts, graphs, and tables as aids to conduct tests; evaluates laboratory test results in the area of concern; prepares technical reports on findings and project results.

Reviews higher graded examiners' data and reports to better understand the technical aspects, documentation and/or administrative protocols.

Prepares evidence for presentation in court; meets with attorneys, investigators or other law enforcement personnel regarding the interpretation of examinations conducted; testify as a key witness in court.

Projects a professional image while representing the Department; and exemplifies the Department values, both on and off duty.

Performs other related duties as assigned.

KNOWLEDGE REQUIRED BY THE POSITION

Advanced knowledge of and skill in applying a wide range of theories, principles, concepts, methodology and practices of analytical chemistry, physical science, or biology or related field to the work that is sufficient to perform mathematical and statistical that relates to analytical laboratory work; and knowledge of and ability to apply Federal, state, and local laws, codes and regulations pertaining to forensic science; apply evidence collection and preservation procedures.

Knowledge of quality assurance procedures and accreditation standards; proper procedures and standard laboratory rules and safety precautions regarding chemicals, toxins and biohazards and evidence collection and preservation procedures.

Advanced knowledge and hands-on experience with forensic investigations of systems and comprehensive knowledge of equipment and supplies used in a forensic laboratory including specialized scientific equipment, instrumentation and software; recent developments, current literature and sources of information related to the assigned forensic specialty and the ability to modify analytical methods, to solve problems or respond to complex technical issues on materials subject to analysis in the specialty area.

Ability to apply theoretical and analytical principles of natural and physical sciences, including organic, inorganic, biochemistry, physical chemistry, and other applicable fields; apply operational methods and techniques of the forensic laboratory, including laboratory testing procedures.

Thorough knowledge of evidence collection, preservation and chain of custody rules/laws and knowledge of safety practices, procedures as they apply to analyses in the laboratory; and knowledge of the rules of evidence and the methods used in presenting evidence in court, and policies and procedures for maintaining and handling evidence and the chain-of-evidence integrity.

Ability to work extensively with chemicals and biohazards in a safe manner; and perform a variety of scientific tests and analyses; recognize anomalies, formulate hypotheses, and take appropriate action; prepare and maintain accurate records/data and prepare clear and concise reports and memoranda.

Ability to testify effectively in court as a key witness in legal proceedings.

Thorough knowledge of and understanding of the principles, theories, concepts and practices of computer science or related field; advanced skill in personal, portable, desktop digital devices, etc.; skill and ability to use a personal computer to apply forensic software applications; and prepare, store, and retrieve data and knowledge of software affiliated with crime scene data; and advanced knowledge of intrusion tools and computer forensic methodologies, protocols, and tools.

Ability to work safely without presenting a threat to self or others is essential.

SUPERVISORY CONTROLS

Works under the Forensic Scientist Supervisor (Firearms Examination Unit), who provides administrative direction on new and unusual techniques, desired results, required data to obtain, change in regulatory constraints, or methods and procedures that may apply to specific cases. Also, receives technical guidance and assistance from the Lead Forensic Scientist (Firearms Toolmark Analyst). The incumbent independently plans and carries out individual assignments; and determines the validity of test methods and results and recommends acceptance or rejection of evidence items. Exercises independent responsibility and is held accountable for actions and findings; and consults and keeps the leader and supervisor apprised of unusual technical problems, best practices and controversial issues.

The work is reviewed for conformance to guidelines, feasibility, soundness of overall approach and the effectiveness of meeting objectives, deadlines, and expected results and adherence to requirements.

GUIDELINES

Guidelines include policies and procedures of DFS, including but not limited to the standard operating procedures developed by the Firearms Examination Unit through the validation of analytical procedures; governing laws and regulations of the District and Federal government, testing regulations manuals, quality assurance and accreditation standards, and scientific literature, precedent cases, technical references, forensic techniques and literature, catalogs and handbooks, internal protocols, Mayor's Orders, instructions, etc.

The guidelines are usually applicable, however, the incumbent may be required to seek guidance/direction when applying them to specific work situations/cases that may or may not be covered.

Judgment is exercised when interpreting, or adapting available standards and guidelines, as agency policies, regulations, precedents, and work directions for application. The incumbent is required to analyze results and recommends changes.

COMPLEXITY

The work often times requires many different and unrelated processes, procedures and methods that are well established; and seeks guidance in determining proper courses of action to assess and evaluate a variety of situations, problems, conditions or questions as well as applies personal knowledge in the application of the same.

Decisions regarding what is required include the assessment of unusual circumstances, variations in approach, and incomplete or conflicting data or unknown phenomena.

SCOPE AND EFFECT

Conducts scientific investigations and assists team members when required to perform analysis including collecting appropriate exhibits to prepare for examination/testing; and prepares documentation regarding findings and analysis that are instrumental in preparing results of tests; and identifying problems that may alter analytical results; and ensures that all documentation is in the appropriate order for court cases and/or final discovery.

The results of the work may affect other experts and/or the department's credibility, adequacy, accuracy and effectiveness of the field investigations, and laboratory tests; and ensures that data is relevant to the specific case. The results are also binding and affect judicial proceedings.

PERSONAL CONTACTS

Contacts are with DFS employees, laboratory personnel, consultants, Federal and District regulatory agencies, law enforcement, and investigators, and other stakeholders.

PURPOSE OF CONTACTS

Contacts are for the purpose of planning, coordinating or resolving operating problems by influencing and motiving persons or groups working towards the same mutual goals or mission and to ensure maintain the chain-of-custody of collected evidence, and storage, and to prepare appropriate reports.

PHYSICAL DEMANDS

Work is sedentary, however, some work requires periods of walking, standing, bending, stretching etc. Also, some work requires sufficient personal agility to possibly collect and process evidence at a variety of crime scenes. The incumbent will occasionally carry items weighing up to 50 pounds, such as bags and/or boxes of evidence, portable computers, peripherals, and other similar materials. Incumbent must possess sufficient manual dexterity to manipulate and operate laboratory equipment; must be able to visually distinguish color, shape, size, number and picture resolution quality; must be able to withstand exposure to disagreeable elements such as malodorous and/or decomposing samples/bodies, blood, bodily fluids, etc., that may pose a health risk.

WORK ENVIRONMENT

The work is performed in an office and laboratory. The office setting is when preparing documentation, and the laboratory setting is during the testing and analysis phase.

The incumbent may be exposed to hazardous materials, toxic substances, blood borne pathogens, and electric current and electrostatic discharge and is required to follow safe laboratory practices and wear protective clothing, including facial masks, safety glasses, gloves, ear protection, etc.

OTHER SIGNIFICANT FACTS

Required to successfully complete competency testing prior to beginning casework in a specialty discipline or sub-discipline; and successfully complete annual proficiency testing as required by accreditation standards.

The nature of the work in the Firearms Examination Unit requires the safe handling and processing of firearms within the unit and standard firearms safety processes must be constantly demonstrated and reinforced.

Must possess and maintain a valid operator driver's license.

Bachelor's degree from an accredited college or university in science; or a higher degree and/or industry certification favorably considered.

SPECIAL REQUIREMENTS

This position's duty station will be housed within the Consolidated Forensic Laboratory (CFL) which is a protection-sensitive facility. As such, incumbents of this position shall be subject to criminal background checks, background investigations, and mandatory drug and alcohol testing, as applicable. Due to the handling of primary evidence, the applicant will be required to submit a buccal swab for the purposes of the DNA Quality Control database for the DFS.

The nature of the DFS mission necessarily involves the potential risks associated with biological or chemical hazards, including morgue functions. Although contact with these functions is intended to be minimal, the risks are nevertheless possible; training to recognize, address, and mitigate these risks is required as is dealing with potentially personally difficult topics, such as crime, death, and disease.